AMENDMENTS TO THE CLAIMS:

Please cancel claims 5 and 9-10 without prejudice or disclaimer, and amend the claims as follows:

1. (Currently Amended) An optical switch comprising:

a first optical ~~amplifier;~~ amplifier which includes:

a first impurity-doped fiber,

a first optical pumping source connected to said first impurity-doped fiber with a first optical branch,

a second optical amplifier connected in cascade to said first optical ~~amplifier; and~~ amplifier, which includes:

a second impurity-doped fiber,

a second optical pumping source connected to said second impurity-doped fiber with a second optical branch,

a first optical coupler inserted between said first optical amplifier and said second optical amplifier

an optical transmission line connected to an input-side of said second optical amplifier, and

a first control circuit connected to said first optical pumping source and said second optical pumping source, ~~for outputting first and second control signals for switching a gain of said first and second optical amplifiers~~

wherein said first control circuit instructs said first optical pumping source whether a pumping light is supplied to said first impurity-doped fiber or is stopped, and inserts a signal

from said optical transmission line to said second optical amplifier when said pumping light is stopped.

2. (Currently Amended) The optical switch according to claim 1, wherein said first and second optical amplifiers each comprise a semiconductor optical fiber amplifier.

3. (Currently Amended) The optical switch according to claim 1, wherein said first and second optical amplifiers each comprise an optical fiber amplifier.

4. (Currently Amended) The optical switch according to claim 1, further comprising:

a first optical isolator inserted between said first optical amplifier and said second optical ~~amplifiers~~ amplifier.

5. (Canceled)

6. (Currently Amended) The optical switch according to claim 1, further comprising:

an optical power monitor ~~for~~ detecting an optical power outputted from said second optical amplifier.

7. (Currently Amended) The optical switch according to claim 1, further comprising:

a third optical ~~coupler inserted between said first and second optical amplifiers, said third optical coupler having an input-side first branch connected to an output of said first optical amplifier and an output-side branch connected to an input of said second optical~~

~~amplifier; and~~ amplifier connected to said second optical amplifier with said optical coupler, wherein said third optical amplifier includes:

a third impurity-doped fiber, and

a third optical ~~amplifier whose output is connected to an input-side second branch of said third optical coupler~~ pumping source connected to said third impurity-doped fiber with a third optical branch.

8. (Currently Amended) The optical switch according to claim 7, wherein said third optical amplifier comprises a semiconductor optical fiber amplifier.

9. (Canceled)

10. (Canceled)

11. (Currently Amended) The optical switch according to claim 7, further comprising:

an optical power monitor ~~for~~ detecting ~~an~~ the optical power outputted from said second optical amplifier.

12. (Original) The optical switch according to claim 4, further comprising:

a second optical isolator connected to the input of said first optical amplifier; and

a third optical isolator connected to the output of said second optical amplifier.

13. (Original) The optical switch according to claim 1, further comprising:

a first optical filter inserted between said first and second optical amplifiers, for passing a signal light wavelength alone therethrough.

14. (Original) The optical switch according to claim 13, further comprising:

a second optical filter connected to the output of said second optical amplifier, for passing the signal light wavelength alone therethrough.

15. (Currently Amended) The optical switch according to claim 1,

wherein said first optical ~~amplifier comprises an optical fiber amplifier, and~~

~~said optical fiber amplifier comprises:~~

~~an erbium-doped optical fiber; and~~

~~a~~ pumping source ~~for generating~~ generate a pumping light whose wavelength is in a 980 nm wavelength region to be inputted to said first erbium-doped ~~optical~~ fiber.

16. (Original) The optical switch according to claim 1, wherein at least one of said first and second optical amplifiers comprises a forward-pumped optical fiber amplifier.

17. (Original) The optical switch according to claim 1, wherein at least one of said first and second optical amplifiers comprises a bidirectional-pumped optical fiber amplifier.

18. (Original) The optical switch according to claim 1, wherein at least one of said first and second optical amplifiers comprises an optical fiber amplifier having the pumping light generated by wavelength-division multiplexing.

19. (Original) The optical switch according to claim 1, wherein at least one of said first and second optical amplifiers comprises an optical fiber amplifier having the pumping light generated by polarization multiplexing.

20. (Currently Amended) An optical switch for ~~a~~ wavelength-division multiplexed light which is obtained by wavelength-division multiplexing a plurality of light signals, said optical switch comprising:

an optical wavelength demultiplexer for demultiplexing said wavelength-division multiplexed light into said plurality of light signals and outputting each of said plurality of light signals to each of a plurality of branches;

a plurality of single wavelength optical switches, each being connected to each of said plurality of branches; and

an optical wavelength multiplexer for multiplexing the lights outputted from said plurality of single wavelength optical switches,

wherein each of said plurality of single wavelength optical switches comprises:

a first optical amplifier;

a second optical amplifier connected in cascade to said first optical amplifier;

a control circuit for outputting first and second control signals for switching a gain of said first and second optical amplifiers;

~~a first optical coupler connected to an input of said first optical amplifier; and~~

a ~~second~~ first optical coupler inserted between said first and second optical amplifiers,

wherein each of said plurality of single wavelengths optical switches comprises:

a first optical amplifier which includes:

a first impurity-doped fiber; and

a first optical pumping source connected to said first impurity-doped fiber with a first optical branch;

a second optical amplifier connected in cascade to said first optical amplifier, and which includes:

a second impurity-doped fiber; and

a second optical pumping source connected to said second impurity-doped fiber with a second optical branch;

a first optical coupler connected to said first optical amplifier;

a second optical coupler inserted between said first and second optical amplifiers: and

a first control circuit for outputting first and second signals for switching a gain of said first and second optical amplifiers.

21. (Currently Amended) An optical switch for a wavelength-division multiplexed light which is obtained by wavelength-division multiplexing a plurality of light signals, said optical switch comprising:

an optical wavelength demultiplexer for demultiplexing said wavelength-division multiplexed light into said plurality of light signals and outputting each of said plurality of light signals to each of a plurality of branches;

a plurality of first optical couplers, each being connected to each of said plurality of branches;

a plurality of first optical amplifiers, each having an input connected to an output of each of said plurality of first optical couplers;

a plurality of second optical amplifiers connected in cascade to said first optical amplifiers to receive an input from said plurality of first optical amplifiers;

a plurality of second optical couplers, ~~each having an input-side first branch connected to the output of said plurality of first optical amplifiers;~~ inserted between said first and second optical amplifiers;

at least one first optical wavelength multiplexer whose input is connected to each of output-side branches of some of said plurality of second optical couplers;

at least one ~~second~~ third optical amplifier whose input is connected to the output of said at least one first optical wavelength multiplexer; and

a control circuit for outputting first and second control signals for switching a gain of said first and second optical amplifiers.

22. (Original) The optical switch according to claim 21, further comprising:

a second optical wavelength multiplexer whose input is connected to the output of said at least one second optical amplifier.

23. (Currently Amended) The optical switch according to claim 1, further comprising:

a signal light detector for detecting whether or not a signal light is inputted to said first optical amplifier and then outputting the result of detection as a detect signal, ~~; and~~

said first ~~a second~~ control circuit for providing said first and second optical amplifiers with control signals for shutting down said first and second optical amplifiers, when said detect signal is inputted to said ~~second~~ first control circuit to indicate that said signal light is not inputted to said first optical amplifier.

24. (Canceled)

25. (Original) An optical network in which a plurality of optical nodes are connected through optical fiber transmission lines,

wherein each of said plurality of optical nodes comprises an optical switch as defined in claim 23.

Please add the following new claims:

26. (New) The optical switch according to claim 1, wherein said first optical amplifier switches a route of light.

27. (New) The optical switch according to claim 21, wherein said first optical amplifier switches a route of said light signals.

28. (New) The optical switch of claim 1, wherein said second coupler is for receiving input light to increase a power of said input signal.

29. (New) An optical signal switching method comprising:

inputting a first optical signal to a first impurity-doped fiber;

inputting a second optical signal to said first impurity-doped fiber from a first optical pumping source;

inputting a second optical signal to a second impurity-doped fiber, from a second pumping source;

outputting said optical signal from second impurity-doped fiber; and

controlling a control circuit connected to said first optical pumping source and said second optical pumping source,

wherein said control circuit instructs said first optical pumping source whether a pumping light is supplied to said first impurity-doped fiber or is stopped, and inserts a signal from a optical transmission line connected to an input-side of said second optical amplifier to said second optical amplifier when said pumping light is stopped.

30. (New) The method of claim 29, further comprising:

amplifying said optical signal by said first impurity-doped fiber.

31. (New) The method of claim 29, further comprising:

amplifying said optical signal by said second impurity-doped fiber.

32. (New) The optical switch according to claim 1, further comprising:

a second optical coupler connected to said first optical amplifier.

33. (New) The optical switch according to claim 1,

wherein said first impurity-doped fiber and said second impurity-doped fiber comprises erbium or tellurium as a doped element.

34. (New) The optical switch according to claim 7,

wherein said third impurity-doped fiber comprises erbium or tellurium as a doped element.

35. (New) The optical switch according to claim 7, wherein said third optical amplifier comprises an optical fiber amplifier.

36. (New) The optical switch according to claim 21, further comprising:

an optical transmission line connected to an input-side of said second optical amplifier.

37. (New) The optical switch according to claim 21,

wherein each of said plurality of first optical amplifiers includes a first impurity-doped fiber and a first optical pumping source connected to said first impurity-doped fiber with a first optical branch,

wherein each of said plurality of second optical amplifiers includes a second impurity-doped fiber and a second optical pumping source connected to said second impurity-doped fiber with a second optical branch.

38. (New) The optical switch according to claim 37,

wherein said control circuit instructs said first optical pumping source whether a pumping light is supplied to said first impurity-doped fiber or is stopped, and inserts a signal from said optical transmission line to said second optical amplifier when said pumping light is stopped.

39. (New) The optical switch according to claim 37,

wherein said first impurity-doped fiber and said second impurity-doped fiber comprise erbium or tellurium as a doped element.

40. (New) The method of claim 29,

wherein said first impurity-doped fiber and said second impurity-doped fiber comprise erbium or tellurium as a doped element.